



PR-2X

PERSONAL RELAXER

OWNER'S MANUAL

CAUTION: Persons subject to any form of seizures or epilepsy, using a pacemaker, or suffering from cardiac arrhythmias or other heart disorders, should not use the PR-2X system without medical supervision.

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Disclaimer

While we can report on research and anecdotal reports on the effects and benefits of using neurotechnology, we also must caution you to consider all such information as unproven. Please assume that all the products that we offer have only experimental status.

If you have a medical condition, please consult with an authorized healthcare provider before using our systems. Do not use our products as substitutes for necessary treatment. We can make no overt or implied claims for cure, treatment or mitigation of any physical or psychological condition; please do not infer any.

Those people who have any type of seizure disorder (epilepsy, etc.) must exercise extreme caution when using any form of pulsed frequencies. Certain frequencies can trigger a seizure in those with pre-existing conditions. Pregnant women and people with heart pacers should also consult with their doctor before using our systems.

You must exercise caution if you use this equipment while under the influence of medication or drugs.

Discontinue use of our systems if you notice negative effects.

We will take back any equipment for any reason during the first 30 days of use. We want you to have the best experience possible. Many thousands of people throughout the world have used mind machines with overwhelmingly beneficial results. We invite you to join in.

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INTRODUCTION

Thank you for selecting the PR-2X Personal Relaxer. The PR-2X system is the most sophisticated audio\visual mind stimulation device available today, yet it is straightforward, logical, and easy to learn. This manual will guide you through the operation of your PR-2X system, from running built-in programs to generating your own customized programs.

There are several ways to start, depending on your personal style:

QUICK START

- To experience the PR-2X stimulation options quickly, see **FOR A QUICK START**, page 1.

BACKGROUND

- For background information on audio-visual mind stimulation techniques, see **A LITTLE SCIENCE AND HISTORY**, page 2.

DETAILED INSTRUCTIONS

- For a thorough explanation of your PR-2X system, see **BASIC OPERATING INSTRUCTIONS**, page 6, and **OPERATION OF ALL STIMULATION FUNCTIONS**, page 11.

CUSTOMIZING YOUR SYSTEM

- Once familiar with the basics, you may want to do some customizing - see **ADVANCED FEATURES**, page 18.

Your PR-2X system offers a wide variety of choices, and can be enjoyed at many different levels. Go just as far as you wish — the basic mind stimulation features are all available at the **QUICK START** level.

Enjoy...

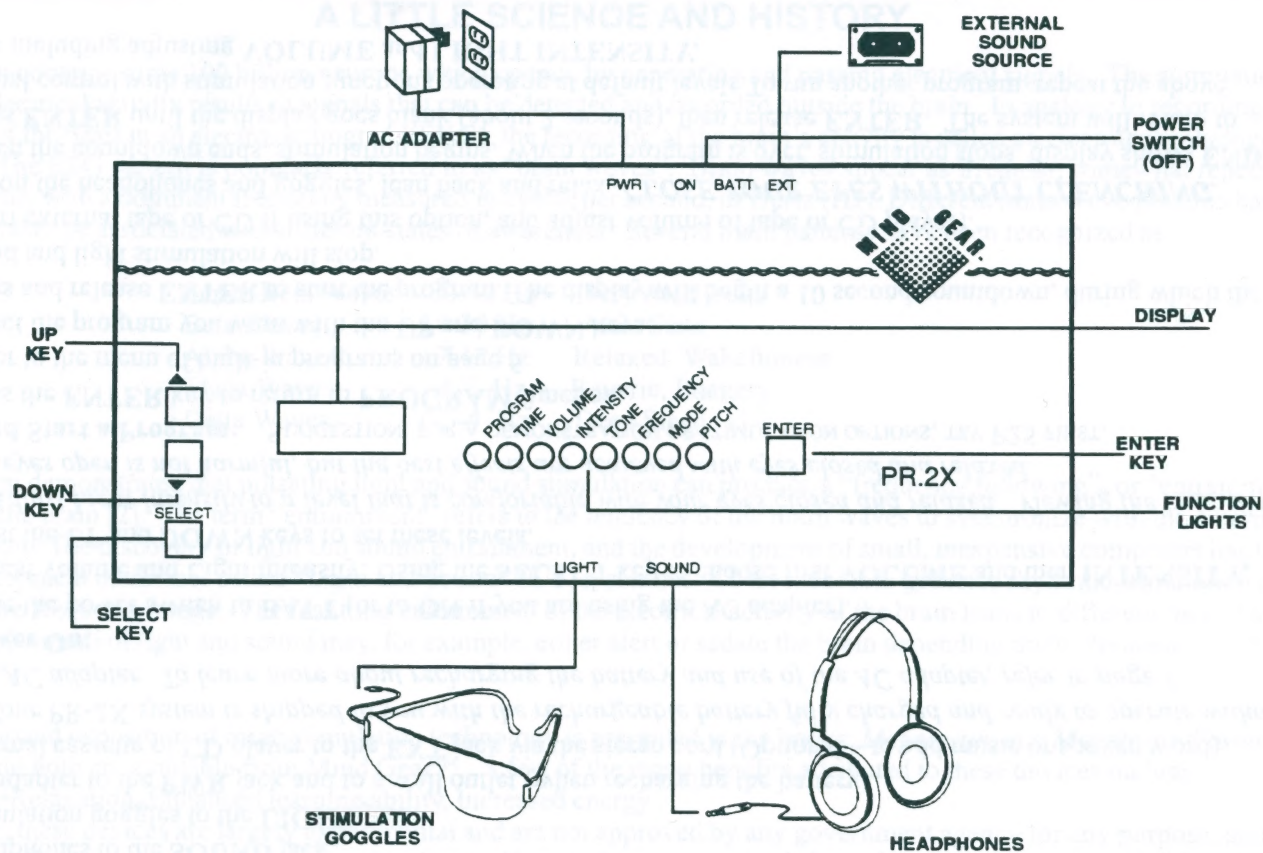


Figure 1 PR -2X Features
2

FOR A QUICK START

Make connections:

- Headphones to the **SOUND** jack.
- Stimulation goggles to the **LIGHT** jack.
- AC adapter to the **PWR** jack and to a wall outlet (when recharging the battery).
- External cassette or CD player to the **EXT** jack via the stereo cord (Optional—to add music or spoken word).

NOTE: Your PR-2X system is shipped to you with the rechargeable battery fully charged and ready to operate without using the AC adapter. To learn more about recharging the battery and use of the AC adapter, refer to page 9.

Turn Power On:

- Slide the power switch to **BATT** (or to **ON** if you are using the AC adapter).
- Adjust Volume and Light Intensity: Using the **SELECT** key to choose first **VOLUME** and then **INTENSITY**, adjust the **UP** and **DOWN** keys to set these levels.

NOTE: Adjust Light Intensity to a level that is comfortable with your eyes closed and relaxed. Viewing the light stimulation with eyes open is not harmful, but the best effects are achieved with eyes closed and relaxed.

Select and Start a Program: SUGGESTION: FOR A DEMONSTRATION OF STIMULATION OPTIONS, TRY P25 FIRST.

- Press the **ENTER** key to return to **PROGRAM** function.
- Refer to the menu of built-in programs on page 5.
- Select the program you want with the **UP** and **DOWN** keys.
- Press and release **ENTER** to start the program. The display will begin a 10 second countdown, during which the sound and light stimulation will stop.
- (Start external tape or CD if using this option, and adjust volume of tape or CD player).
- Put on the headphones and goggles, lean back and relax, **CLOSE YOUR EYES WITHOUT CLENCHING**.
- When the countdown ends, stimulation begins. When the program is over, stimulation stops, display shows **END**.
- Press **ENTER** until the display goes blank (about 2 seconds), then release **ENTER**. The system will return to manual control with stimulation functions operating at default levels. To run another program, repeat the above steps including adjusting **VOLUME** and **LIGHT INTENSITY**.

A LITTLE SCIENCE AND HISTORY

The brain contains some 100 billion neurons which operate by generating and passing electrical signals. The summation of all this electrical activity results in signals that can be detected and recorded outside the brain. In analogy to recording the activity of the heart in an electrocardiogram (EKG), the recording of the brain's activity is called an electroencephalogram (EEG). The EEG pattern is popularly referred to as "brain waves". Brain waves appear as irregular, somewhat repetitive waveforms, with a dominant frequency measured in cycles per second, or Hertz (Hz). Different brain wave patterns have been found to be associated with different states of awareness. Several main patterns have been recognized as:

Super-Beta Waves	30-40 Hz	Very Alert State
Beta Waves	15-30 Hz	Alert State
Alpha Waves	7-14 Hz	Relaxed Wakefulness
Theta Waves	4-7 Hz	Reverie, Imagery
Delta Waves	0.5-4 Hz	Deep Sleep [1]

It has been demonstrated that pulsating light and sound stimulation can produce a "frequency following", or "entrainment" effect in the brain [2]. The term "entrainment" refers to the tendency of the brain waves to synchronize with the external stimulation. The discovery of light and sound entrainment, and the development of small, inexpensive computers has led to the development of devices called "Light and Sound" (L/S) machines. These machines generate rhythmic stimulation in the brain wave frequency range. The resulting entrainment of the electrical activity of the brain leads to different mental states. The novel stimuli of light and sound may, for example, either alert or sedate the brain depending on the frequency of the stimuli [5].

A popularized exposition of mind stimulation technology is presented in the books, *Megabrain*, and *Megabrain Power* [3&4], and both are available from Mind Gear™. A few of the many benefits attributed to these devices include:

- Relaxation, Enhanced learning ability, Increased energy

However, these devices are largely experimental and are not approved by any government agency for any purpose, and Mind Gear™ makes no medical claims whatsoever. Nonetheless, many people have found them to be beneficial and by purchasing your PR-2X system, you have joined those leading the way to self-exploration.

Personal growth and self-improvement are some of the more important benefits that L/S stimulation systems are used for, and many people use self-improvement audio tapes with their light and sound machines. Most of these tapes incorporate relaxation techniques and utilize soothing sounds and music. This is because it has been well documented that a relaxed mental state (the Alpha and Theta states of consciousness) are the best states of mind in which to assimilate information or suggestions. Consequently, many users combine the benefits of L/S machines with audio tapes to enhance and accelerate the effectiveness of L/S technology. However, since the PR-2X system generates its own sound, it may be used quite effectively without an external audio source to enhance creativity, for personal meditation, and to increase memory and learning.

References:

1. Shepard, G. (1988) Neurobiology. New York, Oxford University Press.
2. Walter, W.G. (1954) The electrical activity of the brain. Scientific American, June.
3. Hutchison, M. (1986) Megabrain. New York, Random House, Inc.
4. Hutchison, M. (1994) Megabrain Power, Hyperion, New York
5. Kenyon, T. (1994) Brain States. US Publishing, Naples, Florida.

GETTING THE MOST FROM YOUR PR SYSTEM

- 1) Use it in conjunction with any self-improvement tape or favorite piece of music.
- 2) Use the system for 30-60 minutes every day for the first 30 days.
- 3) Set aside a specific time and place to use the system every day.
- 4) Wear comfortable clothing, avoid tight or restrictive garments.
- 5) You may become chilled during deep relaxation — keep a blanket nearby.
- 6) Have a goal in mind; state it verbally — a problem to solve, an emotion to drain off.
- 7) Draw a mental picture of the results you want to attain - - keep focused on this goal.
- 8) Take several deep breaths prior to beginning a session.
- 9) After a session, take a minute to listen to the whispers, note any answers that appear.
- 10) As you try different programs and stimulation options, monitor your energy level, sleep patterns and reactions to stress. Individual results vary. Find out what works best for you.

BUILT-IN PROGRAM SUMMARY

NOTE: There is no "best" program or optimum way to operate the PR system. The effects of various programs and stimulation options is an intrinsically personal experience. Experiment and find out what works best for you.

<u>Prog</u>	<u>Min</u>	<u>Description</u>	<u>Start Freq</u>	<u>Target Freq</u>	<u>Notes</u>
P01	10	Quick Alpha Relaxer	30Hz	11Hz	Relaxation
P02	15	Slow Ramp Alpha	15Hz	8Hz	Relaxation
P03	10	Magic 11	18Hz	11Hz	Relaxation
P04	20	Schumann's Alpha	19Hz	11, 7.83Hz	Relaxation
P05	30	Schumann's Resonance	25Hz	7.83Hz	Relaxation, Mode Changes
P06	30	High Stress Alpha	25Hz	7.83, 5Hz	For high stress
P07	30	Low Stress Alpha	15Hz	10, 7Hz	For low stress
P08	10	Quick Fix	11Hz	7Hz	All in high Alpha
P09	15	Alpha Break	11Hz	7Hz	Lower Alpha
P10	30	Meditation Medicine	20Hz	7, 5, 3Hz	Theta meditation
P11	15	Quick Theta	15Hz	7.83, 5Hz	Meditation, dreaming
P12	15	Accelerated Learning	25Hz	6, 10Hz	Absorbing information
P13	20	9 O'Clock High	20Hz	9 Hz	Relaxation, energy
P14	20	Multi-Theta	18Hz	7.83, 4Hz	Different Theta frequencies
P15	30	Deep Theta	11Hz	5, 3Hz	Low Theta Range
P16	30	Relaxation, Learning	15Hz	5, 3Hz	Meditation, learning
P17	30	Ultimate Theta/Delta	15Hz	5, 3, 2Hz	Close to sleep
P18	60	Insomniacs Dream	11Hz	1 Hz	Help in falling asleep
P19	50	Mind Expander	10Hz	7.83, 6, 3, 1Hz	Theta frequencies near sleep
P20	25	Mental Gymnastics	25Hz	Many	Mental Exercise, enjoyment
P21	10	Sharpening The Mind	25Hz	Many	Mental Exercise, variety
P22	20	Fire of the Mind	30Hz	Many	High energy, good visuals
P23	60	Relaxed Creativity	18Hz	5Hz	Deep relaxation
P24	20	Basic Brain Tune-up	15Hz	11, 7.83, 5Hz	Mental exercise
P25	5	Demo	8Hz	5Hz	Demonstrates stimulation features

P26	23	The Balancer	35Hz	1-40Hz	Creativity
P27	40	Delta Force	18 Hz	4,1Hz	Lucid dreaming
P28	20	Morning Glory	10Hz	10,18Hz	Waking-up
P29	30	Magic 14	14Hz	14Hz	A.D.D.* Protocol
P30	30	Mind Massager	7.83Hz	7 thru 15Hz	Mental tune- up
P31	30	Alpha-Theta Train	12Hz	5 thru 12Hz	Creativity/ Learning
P32	68	Power Nap	15Hz	3 thru 6Hz	Sleep/ Learning
P33	35	Carnival Ride	2Hz	Many	Energized creativity
P34	30	Creative Monster	16Hz	8 thru 32	Energized
P35	30	Alpha Ramp	20Hz	11,10,9,7.83Hz	Relaxation
P36	30	Alpha Wave	20Hz	11,10,9,7.83Hz	Relaxation
P37	15	Coffee Break	18Hz	8,11Hz	Relaxation
P38	20	Problem Solver	7.83Hz	4,12,7.83Hz	Creativity
P39	30	Multi-Theta	30Hz	6,5,4,3Hz	Learning
P40	30	Theta Wave	20Hz	5,3Hz	Meditation
P41	15	Tune-up	7.83Hz	18,4,7.83Hz	Mental Tune- up
P42	30	Deep Relaxation	12Hz	7,3,4,8Hz	Relaxation
P43	30	Energized Learning	12Hz	8,5,7,10Hz	Learning
P44	30	Meditation Machine	24Hz	11,9,7,5,3,1Hz	Meditation
P45	30	Dreamy Delight	26Hz	12,10,8,6,4,2,1Hz	Sleep
P46	30	High Energy I	10Hz	40,36,32,30Hz	Creativity
P47	36	High Energy II	16Hz	10,36,34,32Hz	Creativity
P48	15	Quick Break	12Hz	8,5,8,10	Rejuvenation
P49	30	Relaxed Creativity	12Hz	8,5,3,1,3,5Hz	Problem solving
P50	20	Quick Learning	7.83Hz	10,7,4,7Hz	Learning
AUTOPILOT PROGRAMS					
APS	30	Auto Super Beta	30 to 40Hz		*A.D.D.= Attention Deficit Disorder
APb	30	Auto Beta	15 to 30Hz		High energy
APA	30	Auto Alpha	7 to 14Hz		High energy
APH	30	Auto Theta	4 to 7 Hz		Alert, aware
APd	30	Auto Delta	1 to 4 Hz		Meditative
					Sleep

BASIC OPERATING INSTRUCTIONS

*The more complex features of your PR system will be addressed in **Operation of All Stimulation Functions**, and **Advanced Features**, on pages 11 and 18 respectively.*

•**CONTROLS AND DISPLAYS** (Refer to the connections shown in Fig. 1 on page 2.)

- Headphones connect to the **SOUND** jack.
- Stimulation goggles connect to the **LIGHT** jack.
- AC adapter connects to the **PWR** jack and to a wall outlet (when conserving or recharging the battery).
- External cassette or CD player connects to the **EXT** jack via the stereo cord (this connection is optional).

The sliding power (**PWR**) switch has three positions:

- ON** (left) for running system with the AC adapter. This is also one way of recharging the internal battery. (about 8 hours with system running programs)
- OFF** (center) This is the recommended way to recharge internal battery; PWR is OFF, AC adapter plugged in. (about 5 hours with system off)
- BATT** (right) for running system on internal battery.

There are four keys on the control panel of the system:

- SELECT**, selects a function and illuminates the corresponding function light.
- ^ UP** and **v DOWN** (labeled with arrows) change the value of selected functions.
- ENTER** has a variety of control functions (as described in appropriate sections).

The eight **function lights** display which function is selected.

The three digit **display** shows the current value or mode of the selected function.

•RUNNING PROGRAMS OR USING MANUAL MODE

When the system is first turned on, it is in **manual** mode. Although the **PROGRAM** function is automatically selected and displayed as **P01** (unless you have changed the Personal Preference Program), and the **program function light** is also illuminated, this does not mean that you must select or start a program.

If desired, you may adjust all (or none) of the stimulation options to your liking, and then continue to run the system without starting a program. This is called running the system in “**manual**” mode.

Most built-in programs control only the **FREQUENCY** and **PHASE** of stimulation. Any function not controlled by the program can be set or changed prior to starting a program, or 30 seconds after a built-in program has begun.

•ADJUSTING VOLUME AND LIGHT INTENSITY

NOTE: For best results, Light Intensity should be adjusted with your eyes closed.

The sound **VOLUME** and light **INTENSITY** may be adjusted to your personal preference using the **SELECT, UP** and **DOWN** keys. You can make these adjustments at any time while in manual mode, or at any time after the first 30 seconds of a built-in or custom program. You can also record these levels in your **PERSONAL PREFERENCE PROGRAM** (page X) so that you won't have to reset them each time you turn the system on.

To adjust **VOLUME** or **INTENSITY** during a program, simply wait at least 30 seconds after the program starts, then adjust the levels using the **SELECT, UP** and **DOWN** keys.

•PAUSING A PROGRAM

You can “stop the clock” and pause the execution of a program at any time by pressing and releasing **ENTER**. The stimulation will continue in whatever state it was in without changing. The right side of the display will indicate a decimal point when **pause** is activated. When you are ready to continue the program, press and release **ENTER** again, and the program will continue (the decimal point disappears).

•STOPPING A PROGRAM

You can also stop a program at any time by pressing and holding **ENTER** until the display clears (about 2 seconds). Then release **ENTER**, and the system will return to manual mode.

•RECHARGING, CARE and MAINTENANCE of the BATTERY

As previously mentioned, your system has an internal battery that can be recharged by using the AC adapter. Whenever the AC adapter is connected, the battery is recharging. Recharging takes about 8 hours if the system is running, and approximately 5 hours with the system turned off. You can recharge it overnight, but **do not** leave the AC adapter connected for more than 8 hours.

Suggestion: To prolong battery life, recharge it before it is completely run down. Depending on program selection and volume \ intensity levels, the battery charge should last about 5 hours.

Normally, you will not lose internal memory of your personal preference settings or custom programs, **although this can happen if the battery is totally discharged**. You will know when the battery needs recharging as the stimulation features and the display lights will become erratic. (see **TROUBLE SHOOTING TIPS**, page 23.)

SYSTEM TIMEOUTS

The PR-2X system automatically takes certain actions based on time:

- After pressing **ENTER** to run a program, the system displays a 10 second count-down (all stimulation features stop). Once the program begins, the system then displays the frequency variations during the program.

- If you press the **SELECT** key during a program (such as to change **VOLUME**, **INTENSITY**, etc.), **FREQUENCY** will be reselected and displayed after 10 seconds of no further action. If **TIME** mode is selected during a program (to display how much time remains in that program), **FREQUENCY** will not be automatically reselected.

- After approximately 2 hours of with no actions, the system stops operation and displays a single hyphen "-". If this happens, move the power switch to **off**. This enhances battery life. *After 30 minutes of no action while running the system in **manual mode**, the stimulation functions will stop.* Set the power switch to **OFF** and back **ON** to reset.

OPERATION OF ALL STIMULATION FUNCTIONS

It is not necessary to adjust any of the stimulation features to run built-in or custom programs, and **FREQUENCY** and **PHASE** are adjusted **ONLY** while using manual mode, or when designing custom programs. For initial ease of operation, you may want to skip the **FREQUENCY** and **MODE** functions (the **SELECT** switch cycles through them), and concentrate on **VOLUME**, **INTENSITY**, **TONE**, and **PITCH** for now.

NOTE: As with **VOLUME** and **INTENSITY**, **TONE** and **PITCH** can also be adjusted prior to, or anytime during built-in, or custom programs. If you have started a program, wait at least 30 seconds after it begins to make these adjustments.

The system will allow you to change **FREQUENCY** and **PHASE** (**PHASE** is 1 of 3 selections in the **MODE** function) prior to running a program. **However**, these changes will be over-ridden and controlled by the selected built-in, or custom program once it begins. *Adjust **FREQUENCY** or **PHASE** for manual mode, or when entering custom programs **ONLY**.*

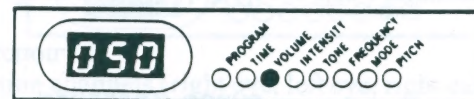
There are **ten** functions in your PR system that can be selected for display and control. One of the **eight** function lights is always on, indicating which function is selected. Press **SELECT** to choose a different function. The current value of the selected function is always shown in the display, and the **UP** and **DOWN** keys will change the value of the selected functions.

How do eight lights handle ten functions? As mentioned above, three separate **MODE** functions are accessible while the **MODE** function light is illuminated. They are: **PHASE**, **DUTY CYCLE**, and **RATE MULTIPLE**, and all three of their values are displayed at the same time - one digit for each - with the brightest indicating the one currently selected. Therefore, the **SELECT** key must be pressed three separate times to cycle through the **MODE** function beginning with **PHASE**, on the far right. (This may sound complex, but it is very easy once you try it!)

As you press the **SELECT** key, some functions may be skipped. This is because the selections interact, making other selections inactive. These inactive selections are automatically skipped as the light advances. The following instructions point out these interactions.

•VOLUME

Range: 0-100

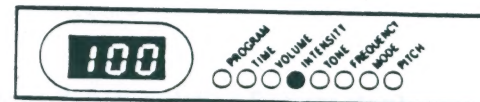


The **VOLUME** function controls the sound level in the headphones, but not the external sound source volume. Use the volume controls on your cassette or CD player to adjust the external (**EXT**) sound source volume.

NOTE: The **VOLUME** of your PR system may change depending on the Tone selection (ex: Binaural may sound loud compared to Single Tone). You may want to select the **TONE** prior to setting the **VOLUME**.

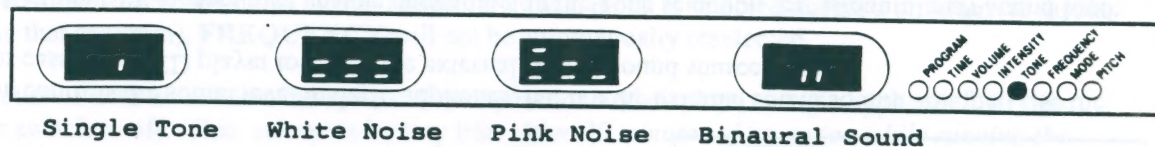
•INTENSITY

Range: 0-100



The **INTENSITY** function controls the brightness of the lights in your stimulation goggles. You may find that the brightness of your surroundings will affect how high or low you'll want to set the **INTENSITY**. Always set **INTENSITY** to a level that is comfortable with your eyes closed.

•TONE



The **TONE** selections are pulsed at a rate controlled by the **FREQUENCY** function.

White Noise is a mixture of many frequencies, with equal sound energy at each frequency. **Pink Noise** is also a mixture of many frequencies, but with equal sound energy in each octave (an octave is an interval that doubles in frequency, such as from 220 Hz to 440 Hz). Since there is a broader range of frequencies in the higher octaves, White Noise contains more high frequency energy. The White and Pink Noise tones provided in the PR system are approximations to true White and Pink Noise. **NOTE:** When White or Pink Noise is selected, the **PITCH** function becomes inactive.

Binaural Signal Sound is created by sending a tone of one frequency in one ear, and a slightly different frequency tone in the other. The result is that the brain processes the two continuous tones in such a way that you hear and sometimes feel the frequency difference, or "beat frequency". For example, if you pulsed an "A" tone of 440 Hz and another tone of 445 Hz, the brain will hear the subtracted difference of 5Hz. This is controlled by the **FREQUENCY** function value.

Binaural Sound can be used effectively without light stimulation. You may want to experiment by using different Binaural frequencies to enhance studying, meditation, etc. You can also connect your PR system to your stereo and listen to Binaural sound without wearing the headphones. (It helps to sit equidistant from the speakers for proper stereo separation.)